IN THE DRAWINGS

The drawings are amended to correct informalities. Particularly, a Replacement Sheet of Figure 5 is submitted herewith to correct reference characters. No new matter is added.

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REMARKS

This Amendment is in response to the Office Action mailed on September 28, 2006. Claims 1, 4, 10, 18, 25 and 27 are amended editorially and are supported, for example, in the specification on page 7, lines 35-37. The specification is amended on page 1, lines 7-12; page 12, lines 27-34; and page 13, lines 11-21 to correct informalities. Figure 5 is amended to correct informalities. No new matter is added. Claims 1-21 and 25-28 are pending.

Objections to the Specification:

The specification and drawings are objected to for informalities. The specification on page 12, lines 27-34 and Figure 5 is objected to for not providing appropriate reference characters. The specification on page 12, lines 27-34 and Figure 5 are amended to provide appropriate reference characters. Withdrawal of this objection is requested.

The specification on page 1, lines 7-12 is objected for an incorrect spelling of the term "insulation". The specification on page 1, lines 7-12 is amended to spell the term "insulation" correctly. Withdrawal of this objection is requested.

The specification on page 13, lines 11-21 is objected to for not clearly defining the term "T_1". The term "T_1" is a start of a measurement and denotes a timing after the starting of the application of the voltage. The term "T_1" does not denote the start of the application of the voltage. As shown in Figure 4, a time period (T_2- T_1) is indicated within a time range between the starting of the application of the voltage and obtaining a constant current value. The term "T_1" is located after a peak 11 due to the inrush of current as the current waveform does not rise without the application of the voltage. Furthermore, a discharge phenomenon that is due to a surface discharge, which is not seen on the waveform of the normal product, is observed after the peak 11 due to the inrush current (see page 11, line 20-page 12, line 2). Thus, the measurement period (T_2-T_1) may be further defined as a time period between an appearance of peak current do to an inrush current and the obtainment of a constant current. Withdrawal of this objection is requested.

§112, First Paragraph Rejections:

Claim 1 is rejected as failing to comply with the written description requirement and the enablement requirement. This rejection is traversed.

With regards to the written description requirement, support for the feature of determining whether a precursor is defective if the current value exceeds a previously set reference current value "within a time period corresponding to a time period between an appearance of peak current due to an inrush current and obtaining of a constant current when a voltage is applied to a normal secondary battery precursor" is found on page 7, lines 31-37; and page 11, lines 16-19 and 25-31.

On page 11, lines 16-19 and lines 25-31 the appearance of a peak immediately after the application of the voltage due to an inrush current to the secondary battery precursor with a subsequent current decrease over time is discussed. On page 7, lines 31-37 a time period between starting of the application and obtaining of the constant current is approximately 60 milliseconds when a voltage is applied to a normal secondary battery precursor is discussed. Withdrawal of this rejection is requested.

With regards to the enablement requirement, in addition to the above points, page 13, lines 11-18 provides details on how to assure the accuracy of the inspection of the secondary battery. Furthermore, as required by claim 1, an appearance of peak current due to an inrush current can be detected based on the measurement of a current flowing due to application of the inspection voltage as such a measurement is performed at intervals of 1ms or less. Thus, even if the time of the peak current due to an inrush of current is not known, the peak current due to an inrush current may be detected by this measurement and it is possible to determine if a current value exceeding a previously set reference current value appears within a time period defined by claim 1. Withdrawal of this rejection is requested.

§103(a) Rejections:

Claims 1, 5-7 and 9 are rejected as being obvious over Ise (JP Publication No. 2000/195565) in view of Bertness (US Patent No. 5,914,605). This rejection is traversed.

Claim 1 is directed to a method for manufacturing a secondary battery that requires, among other features, the step of inspecting the secondary battery precursor which includes applying a constant inspection voltage between the pair of electrodes before an electrolyte solution is injected between the pair of electrodes, and measuring a current flowing due to application of the inspection voltage at intervals of 1 ms or less. Claim 1 further requires determining whether the precursor is defective based on whether a current value exceeds a previously set reference current value within 60 milliseconds from starting the application of the inspection voltage, which is the time period between the appearance of a peak current due to an inrush current and when a constant current is obtained after a voltage is applied to a normal secondary battery precursor.

The combination of Ise and Bertness does not teach or suggest these features. Ise is directed to a battery voltage measuring device that merely inspects a potentially defective product in which a voltage between a pair of electrodes is measured when a breakdown occurs. Nowhere does Ise teach or suggest measuring a current flowing due to application of the inspection voltage at intervals of 1 ms or less or of determining whether the precursor is defective if a current value that exceeds a previously set reference current value is detected within 60 milliseconds from starting the application of the inspection voltage, which is the time period between the appearance of a peak current due to an inrush current and when a constant current is obtained after a voltage is applied to a normal secondary battery precursor. Furthermore, because a breakdown, as measured in Ise, can only occur after electric charge between the pair of electrodes is completed, Ise does not contemplate a voltage measurement in intervals of 1 ms or less.

The combination of Ise with Bertness does not overcome these deficiencies. Bertness is directed to an electronic battery tester that calculates battery conductance based upon the magnitude of the differential current and the change in voltage over an interval of 200 microseconds to determine the condition of the battery. However, nowhere does Bertness teach or suggest determining if a current value that exceeds a previously set reference current value is detected within 60 milliseconds from starting the application of the inspection voltage, which is the time period between the appearance of a peak current due to an inrush current and when a constant current is obtained after a voltage is applied to a normal secondary battery precursor. Bertness performs a

completely different measurement and therefore the time interval in which the measurement takes place is irrelevant to the interval of claim 1. For at least these reasons, claim 1 is not unpatentable over the combination of Ise and Bertness and should be allowed. Claims 5-7 and 9 depend from claim 1 and should be allowed for at least the same reasons.

Claims 2 and 3 are rejected as being obvious over Ise in view of Bertness and further in view of Janah (US Patent No. 5,650,620). This rejection is traversed. Claims 2 and 3 depend from claim 1 and should be allowed for at least the same reasons discussed above. Applicants do not concede the correctness of this rejection.

Claim 8 is rejected as being obvious over Ise in view of Bertness and further in view of Bailey (US Patent No. 5,709,962). This rejection is traversed. Claim 8 depends from claim 1 and should be allowed for at least the same reasons discussed above. Applicants do not concede the correctness of this rejection.

Claims 4, 10, 11, 13-15, 17-19, 21, 25 and 27 are rejected as being obvious over Ise in view of Bertness and further in view of Janah. This rejection is traversed.

Claim 10 is directed to a method for manufacturing a secondary battery that requires, among other features, the step of inspecting the secondary battery precursor which includes applying an inspection voltage between the pair of electrodes before an electrolyte solution is injected between the pair of electrodes, and measuring a current flowing due to application of the inspection voltage at intervals of 1 ms or less. Claim 10 further requires determining whether the precursor is defective based on whether the current has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection voltage, with the allowable range being calculated based on a current waveform when a voltage is applied to a normal secondary battery precursor.

The combination of Ise, Bertness and Janah do not teach or suggest these features. As discussed above, Ise is directed to a battery voltage measuring device that merely inspects a potentially defective product in which a voltage between a pair of electrodes is measured when a breakdown occurs. Nowhere does Ise teach or suggest measuring a current flowing due to application of the inspection voltage at intervals of 1 ms or less or

of determining whether the precursor is defective based on whether the current has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection voltage, with the allowable range being calculated based on a current waveform when a voltage is applied to a normal secondary battery precursor. Furthermore, because a breakdown, as measured in Ise, can only occur after electric charge between the pair of electrodes is completed, Ise does not contemplate a voltage measurement in intervals of 1 ms or less.

Bertness does not overcome these deficiencies. As discussed above, Bertness is directed to an electronic battery tester that calculates battery conductance based upon the magnitude of the differential current and the change in voltage over an interval of 200 microseconds to determine the condition of the battery. However, nowhere does Bertness teach or suggest determining whether the precursor is defective based on whether the current has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection voltage, with the allowable range being calculated based on a current waveform when a voltage is applied to a normal secondary battery precursor. Bertness performs a completely different measurement and therefore the time interval in which the measurement takes place is irrelevant to the interval of claim 10.

Janah also does not overcome these deficiencies. Janah is directed to a method of verifying that a given insulative element conforms with a reference insulative element. However, nowhere does Janah teach or suggest determining whether the precursor is defective based on whether the current has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection voltage, with the allowable range being calculated based on a current waveform when a voltage is applied to a normal secondary battery precursor. Janah performs a completely different measurement for a different purpose and therefore the reference curve shown in Figure 1 of Janah is irrelevant to the method of claim 10. For at least these reasons, claim 10 is not unpatentable over the combination of Ise, Bertness and Janah and should be allowed. Claims 4, 11, 13-15 and 17 depend from claim 10 and should be allowed for at least the same reasons.

Claim 18 is directed to a method for manufacturing a secondary battery that requires, among other features, the step of inspecting the secondary battery precursor which includes applying an inspection current between the pair of electrodes before an electrolyte solution is injected between the pair of electrodes, and measuring a voltage due to application of the inspection current at intervals of 1ms or less. Claim 18 further requires determining whether the precursor is defective based on whether the voltage has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection current, with the allowable range being calculated based on a voltage waveform when a current is applied to a normal secondary battery precursor.

The combination Ise, Bertness and Janah does not teach or suggest these features. As discussed above, Ise is directed to a battery voltage measuring device that merely inspects a potentially defective product in which a voltage between a pair of electrodes is measured when a breakdown occurs. Nowhere does Ise teach or suggest measuring a voltage due to application of the inspection current at intervals of 1 ms or less or of determining whether the precursor is defective based on whether the voltage has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection current, with the allowable range being calculated based on a voltage waveform when a current is applied to a normal secondary battery precursor. Furthermore, because a breakdown, as measured in Ise, can only occur after electric charge between the pair of electrodes is completed, Ise does not contemplate a voltage measurement in intervals of 1 ms or less.

Bertness does not overcome these deficiencies. As discussed above, Bertness is directed to an electronic battery tester that calculates battery conductance based upon the magnitude of the differential current and the change in voltage over an interval of 200 microseconds to determine the condition of the battery. However, nowhere does Bertness teach or suggest determining whether the precursor is defective based on whether the voltage has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection current, with the allowable range being calculated based on a voltage waveform when a current is applied to a normal secondary battery precursor. Bertness performs a completely different measurement and therefore

the time interval in which the measurement takes place is irrelevant to the interval of claim 18.

Janah also does not overcome these deficiencies. As discussed above, Janah is directed to a method of verifying that a given insulative element conforms with a reference insulative element. However, nowhere does Janah teach or suggest determining whether the precursor is defective based on whether the voltage has a value beyond a predetermined allowable range within 60 milliseconds from starting of the application of the inspection current, with the allowable range being calculated based on a voltage waveform when a current is applied to a normal secondary battery precursor. Janah performs a completely different measurement for a different purpose and therefore the reference curve shown in Figure 1 of Janah is irrelevant to the method of claim 18. For at least these reasons, claim 18 is not unpatentable over the combination of Ise, Bertness and Janah and should be allowed. For at least these reasons, claim 18 is not unpatentable over the combination of Ise, Bertness and Janah should be allowed. Claims 19-21 depend from claim 18 and should be allowed for at least the same reasons.

Claim 25 is directed to a device for inspecting a secondary battery precursor that requires, among other features, a voltage application means for applying an inspection voltage between the pair of electrodes and a current measurement means for measuring a current flowing due to application of the inspection voltage at intervals of 1 ms or less. Claim 25 also requires that the precursor is determined to be defective if the current measured by the current measurement means has a value beyond the reference current value within 60 milliseconds from the starting of the application of the inspection voltage.

The combination of Ise, Bertness and Janah does not teach or suggest these features. As discussed above, Ise is directed to a battery voltage measuring device that merely inspects a potentially defective product in which a voltage between a pair of electrodes is measured when a breakdown occurs. Nowhere does Ise teach or suggest a voltage application means for applying an inspection voltage between the pair of electrodes and a current measurement means for measuring a current flowing due to application of the inspection voltage at intervals of 1 ms or less or of determining whether the precursor is defective based on if the current measured by the current

measurement means has a value beyond the reference current value within 60 milliseconds from the starting of the application of the inspection voltage. Furthermore, because a breakdown, as measured in Ise, can only occur after electric charge between the pair of electrodes is completed, Ise does not contemplate a voltage measurement in intervals of 1 ms or less.

Bertness does not overcome these deficiencies. As discussed above, Bertness is directed to an electronic battery tester that calculates battery conductance based upon the magnitude of the differential current and the change in voltage over an interval of 200 microseconds to determine the condition of the battery. However, nowhere does Bertness teach or suggest determining whether the precursor is defective based on if the current measured by the current measurement means has a value beyond the reference current value within 60 milliseconds from the starting of the application of the inspection voltage. Bertness performs a completely different measurement and therefore the time interval in which the measurement takes place is irrelevant to the interval of claim 25.

Janah also does not overcome these deficiencies. Janah is directed to a method of verifying that a given insulative element conforms with a reference insulative element. However, nowhere does Janah teach or suggest determining whether the precursor is defective based on if the current measured by the current measurement means has a value beyond the reference current value within 60 milliseconds from the starting of the application of the inspection voltage. Janah performs a completely different measurement for a different purpose and therefore the reference curve shown in Figure 1 of Janah is irrelevant to the method of claim 25. For at least these reasons, claim 25 is not unpatentable over the combination of Ise, Bertness and Janah and should be allowed. For at least these reasons, claim 25 is not unpatentable over the combination of Ise, Bertness and Janah and should be allowed.

Claim 27 is directed to a device for inspecting a secondary battery precursor that requires, among other features, a current application means for applying an inspection current between the pair of electrodes and a voltage measurement means for measuring a voltage flowing due to application of the inspection current at intervals of 1 ms or less. Claim 27 also requires that the precursor is determined to be defective if the voltage

measured by the voltage measurement means has a value beyond the reference voltage value within 60 milliseconds from the starting of the application of the inspection current.

The combination of Ise, Bertness and Janah does not teach or suggest these features. As discussed above, Ise is directed to a battery voltage measuring device that merely inspects a potentially defective product in which a voltage between a pair of electrodes is measured when a breakdown occurs. Nowhere does Ise teach or suggest a current application means for applying an inspection current between the pair of electrodes and a voltage measurement means for measuring a voltage due to application of the inspection current at intervals of 1 ms or less or of determining whether the precursor is defective based on if the voltage measured by the voltage measurement means has a value beyond the reference voltage value within 60 milliseconds from the starting of the application of the inspection current. Furthermore, because a breakdown, as measured in Ise, can only occur after electric charge between the pair of electrodes is completed, Ise does not contemplate a voltage measurement in intervals of 1 ms or less.

Bertness does not overcome these deficiencies. As discussed above, Bertness is directed to an electronic battery tester that calculates battery conductance based upon the magnitude of the differential current and the change in voltage over an interval of 200 microseconds to determine the condition of the battery. However, nowhere does Bertness teach or suggest determining whether the precursor is defective based on if the voltage measured by the voltage measurement means has a value beyond the reference voltage value within 60 milliseconds from the starting of the application of the inspection current. Bertness performs a completely different measurement and therefore the time interval in which the measurement takes place is irrelevant to the interval of claim 27.

Janah also does not overcome these deficiencies. Janah is directed to a method of verifying that a given insulative element conforms with a reference insulative element. However, nowhere does Janah teach or suggest determining whether the precursor is defective based on if the voltage measured by the voltage measurement means has a value beyond the reference voltage value within 60 milliseconds from the starting of the application of the inspection current. Janah performs a completely different measurement for a different purpose and therefore the reference curve shown in Figure 1 of Janah is irrelevant to the method of claim 27. For at least these reasons, claim 27 is not

unpatentable over the combination of Ise, Bertness and Janah and should be allowed. For at least these reasons, claim 27 is not unpatentable over the combination of Ise and Bertness and should be allowed.

Claim 12 is rejected as being obvious over Ise in view of Bertness and in view of Janah and further in view of Keech (US Patent No. 6,392,416). This rejection is traversed. Claim 12 depends from claim 10 and should be allowed for at least the same reasons discussed above. Applicants do not concede the correctness of this rejection.

Claims 16 and 20 are rejected as being obvious over Ise in view of Bertness and in view of Janah and further in view of Bailey. This rejection is traversed. Claim 16 depends from claim 10 and should be allowed for at least the same reasons discussed above. Claim 20 depends from claim 18 and should be allowed for at least the same reasons discussed above. Applicants do not concede the correctness of this rejection.

Claims 26 and 28 are rejected as being obvious over Ise in view of Bertness and in view of Janah and further in view of (US Patent No. 5,563,508). This rejection is traversed. Claim 26 depends from claim 25 and should be allowed for at least the same reasons discussed above. Claim 28 depends from claim 27 and should be allowed for at least the same reasons discussed above. Applicants do not concede the correctness of this rejection.

Conclusion:

Applicants respectfully assert that claims 1-21 and 25-28 are now in condition for allowance. If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, Douglas P. Mueller (Reg. No. 30,300), at (612) 455-3804.

Respectfully submitted,

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Dated: December 28, 2006

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